



# START

## Department of Energy

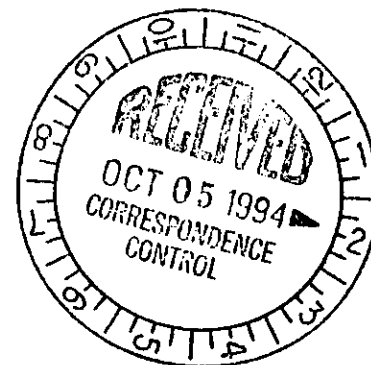
Richland Field Office

P.O. Box 550

Richland, Washington 99352

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OCT 04 1994

President  
Westinghouse Hanford Company  
Richland, Washington

Dear Sir:

### MOISTURE LOSS DURING SAMPLE EXTRUSION AT 222-S LABORATORY

It has come to the attention of the Department of Energy, Richland Operations Office (RL) that higher-than-expected moisture losses have apparently occurred during some waste tank characterization sample extrusions in the 222-S Laboratory.

During the month of August, 1994, samples from BX-101, BX-108, C-111, and SY-103 exceeded the safety limit of 17% minimum moisture content, measured by thermogravimetric analysis (TGA). While these results were somewhat predictable for crust materials from C-111 and SY-103, they were not expected for BX-101 and BX-108. Descriptions for BX-101 and BX-108 samples were given as "glossy black/brown material with a piece of white 'rock like' material," and "dark black/brown glossy material (no crust)," respectively. RL understands that the sample from BX-101 dried more than usual due to a slow extrusion caused by piece of wire wedged between the auger and the sleeve, but the moisture loss still appears very high for the apparent moisture in the sample upon initial extrusion. The BX-108 sample had an extremely low moisture content (4.6%), with no extrusion problems identified.

RL is aware that there will be moisture loss during the extrusion process, due to the effects of heat and ventilation. However, Westinghouse Hanford Company (WHC) estimates for this loss are on the order of less than 20% decrease in measured moisture content. Estimates for moisture content of these samples based on visual observation (an RL representative witnessed one of the BX-101 extrusions) and sample descriptions are on the order of 50%. Assuming a maximum moisture loss of 20%, TGA for the BX-101 and BX-108 samples should be no less than 30%.

WHC personnel have indicated that a study is underway to quantify moisture loss during the extrusion process. This study will collect one TGA sample immediately after extrusion and another at the end of the sample handling process within the hot cell. RL requests a copy of the work scope for this study, a schedule for study performance, and the preliminary results and final report as soon as they become available, or not later than November 15, 1994.

If you have any questions please call me on (509) 376-2246.

Sincerely,

*John M. Clark*  
John M. Clark, Acting Director  
Characterization Division

cc: Thomas Kelley, WHC  
Kenneth Lang, EM-36,



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Author

Addressee

Correspondence No.

J. M. Clark/RL

President/WHC

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